Abstract

Charles University in Prague, Pharmaceutical Faculty in Hradec Králové

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Title of Diploma Thesis: **Pyrazine derivatives as potential drugs V.**

TBC is a specific world-wide infectious disease, compounded by increased migrations of people, the spread of HIV and the growth of MDR-TB, including extremely resistant strains. Precisely for the growth of MDR-TB resistant mycobacteria the work is focused on the preparation and development of other possible antituberculosis drugs (Pyrazine derivatives). Research into new medications lays emphasis on altering the effects of enzymes important for the vitality of mycobacteria. As part of my diploma thesis, pyrazine derivative modifications of clinical pyrazinamide medications were prepared. PZA is an important part of the short-term TBC treatment, having a sterile effect and the ability to work in an acidic environment and has a significant synergy with rifampicin. The small PZA molecule is a precursor to the pyrazine acid activated by pyrazinamide or nicotinamide. Hydrolysis of PZA in mycobacterial cells create Pyrazinecarboxylic acid (POA).

In the experimental part, we have examined the variation molecules pyrazinamide and preparing the new derivatives with potential antituberculotic activity. We have prepared several derivatives with aliphatic and aromatic substituents via oxygen bond.. Part of this work was also the prediction of new compounds (docking).

Successfully prepared and confirmed agents will be in the next phase subsequently subjected to *in-vitro* testing.